QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

CE/QA/PR/299/2022-23, DATE: 13/03/23		
Name of Work	:	Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10). Estimation Cost of 1500.00 Lakhs.
Job Code	:	017-23-000002
Bill No.	:	**2nd & Part Bill**
Type of Test Performed	:	Bitumen Content and Gradation test As per Table 500.17 MoRTH V Revision.
Materials on which Tests Was Performed	:	1. BM-50mm, Grade-II 2. BC-40mm, Grade-II
Officers present during inspection	:	1.Sri. Siddaramaiah, AE – Ward No. 129. 2.Smt. Vijayamala Balagi, EE - Quality Assurance. 3.Sri. S. V. Malgavi, AEE – Quality Assurance.
Project Management Consultants	:	**M/S. SAPIENCE CONSULTANTS AND ENGINEERS, BANGALORE**
Observations	:	Bitumen Content and Gradation Test were conducted at 3 locations in presence of AE (Ward No. 129) & Project Management Consultants. The readings of Bitumen content and Gradation Test for BM-50mm, Grade-II and BC-40mm, Grade-II are recorded by the PMC consultants. The location wise test results furnished by PMC to BBMP QA department are reproduced in the tables shown below:
Test Locations	:	1. Location 1: Infront of Masdhura tutorial Jnanajyothi nagar. 2. Location 2: Infront of akka tangiyara nilaya, #17 (W1217), Jnyanajyothi nagara. 3. Location 3: Infront of Prabhanjan Nilay #841 (W1255), Jnanajyothi nagar.

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
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Table-01: Bitumen Content Test Results for Location-01
BM-50MM (GRADE-II)

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	483
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g	-	-
5. Weight of Ash, g	18	
6. Weight of Bitumen Extracted, g (corrected)	3.60	17.00 3.40
7. Bitumen content in %		3.50
8. Average		

Test 1

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	JOBMix Gradation
26.5	0	0	0	100	100
19	31.5	31.5	6.54	93.46	90-100
13.2	175.8	207.3	43.01	56.99	56-88
4.75	160	367.3	76.20	23.80	16-36
2.36	54.8	422.1	87.57	12.43	4-19
0.3	32.1	454.2	94.23	5.77	2-10
0.075	8.5	462.7	96.00	4.00	0-8

Test 2

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	JOBMIX Gradation
26.5	0	0	0	100	100
19	32.6	32.6	6.75	93.25	90-100
13.2	145.8	178.4	36.94	63.06	56-88
4.75	172.9	351.3	72.73	27.27	16-36
2.36	78.5	429.8	88.99	11.01	4-19
0.3	25.2	455	94.20	5.80	2-10
0.075	15.6	470.6	97.43	2.57	0-8

Table-02: Bitumen Content Test Results for Location-01
BC-40MM (GRADE-II)

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	471.5	472.5
3. Weight of Asphalt and Mineral matter Extracted, g	28.5	27.5
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	28.5	27.5
7. Bitumen content in %	5.70	5.50
8. Average		5.60

Test 1

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	15	15	3.2	96.8	90 - 100
9.5	62	77	16.3	83.7	70 - 88
4.75	92	169	35.8	64.2	53 - 71
2.36	43	212	45.0	55.0	42 - 58
1.18	40	252	53.4	46.6	34 - 48
0.600	45	297	63.0	37.0	26 - 38
0.300	50	347	73.6	26.4	18 - 28
0.150	35	382	81.0	19.0	12 - 20
0.075	52	434	92.0	8.0	4 - 10

ಕಾಯಕ ಅಭಿಯಂತರರು 13/3/2023
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SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
19	0	0	0	100	100
13.2	15	15	3.2	96.8	90 - 100
9.5	62	77	16.3	83.7	70 - 88
4.75	92	169	35.8	64.2	53 - 71
2.36	42	211	44.7	55.3	42 - 58
1.18	46	257	54.4	45.6	34 - 48
0.600	51	308	65.2	34.8	26 - 38
0.300	52	360	76.2	23.8	18 - 28
0.150	35	395	83.6	16.4	12 - 20
0.075	36	431	91.2	8.8	4 - 10

Table-03: Bitumen Content Test Results for Location-02
BM-50MM (GRADE-II)

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	483.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	16.50
7. Bitumen content in %	3.50	3.30
8. Average	3.40	

SIEVE SIZE mm	Test 1				JOBMIX Gradation
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
26.5	0	0	100	0	100
19	7.65	7.65	92.35	7.65	90-100
13.2	34.28	41.93	58.07	34.28	56-88
4.75	30.63	72.56	27.44	30.63	16-36
2.36	10.84	83.40	16.60	10.84	4-19
0.3	7.34	90.74	9.26	7.34	2-10
0.075	1.70	92.44	7.56	1.70	0-8

SIEVE SIZE mm	Test 2				JOBMIX Gradation
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
26.5	0	0	100	0	100
19	5.19	5.19	94.81	5.19	90-100
13.2	30.57	35.76	64.24	30.57	56-88
4.75	39.77	75.53	24.47	39.77	16-36
2.36	15.59	91.13	8.87	15.59	4-19
0.3	4.67	95.80	4.20	4.67	2-10
0.075	2.56	98.37	1.63	2.56	0-8

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Table-04: Bitumen Content Test Results for Location-02
BC-40MM (GRADE-II)

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.5	472
3. Weight of Asphalt and Mineral matter Extracted, g	27.5	28
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.5	28
7. Bitumen content in %	5.50	5.60
8. Average	5.55	

Test 1

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.6	13.6	2.9	97.1	90 - 100
9.5	68.9	82.5	17.5	82.5	70 - 88
4.75	92	174.5	36.9	63.1	53 - 71
2.36	46.5	221	46.8	53.2	42 - 58
1.18	42.8	263.8	55.8	44.2	34 - 48
0.600	45.4	309.2	65.4	34.6	26 - 38
0.300	40.5	349.7	74.0	26.0	18 - 28
0.150	45.6	395.3	83.7	16.3	12 - 20
0.075	50.8	446.1	94.4	5.6	4 - 10

Test 2

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	16.8	16.8	3.6	96.4	90 - 100
9.5	62.3	79.1	16.8	83.2	70 - 88
4.75	95.1	174.2	36.9	63.1	53 - 71
2.36	42.1	216.3	45.8	54.2	42 - 58
1.18	45.4	261.7	55.4	44.6	34 - 48
0.600	50.1	311.8	66.1	33.9	26 - 38
0.300	55.6	367.4	77.8	22.2	18 - 28
0.150	35.4	402.8	85.3	14.7	12 - 20
0.075	32.1	434.9	92.1	7.9	4 - 10

Table-05: Bitumen Content Test Results for Location-03
BM-50MM (GRADE-II)

Description	Test 1	Test 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	483	482.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17	17.50
7. Bitumen content in %	3.40	3.50
8. Average	3.45	

Test 1

SIEVE SIZE mm	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	JOBMIX Gradation
26.5	0	0	0	100	100
19	34.8	7.20	7.20	92.80	90-100
13.2	165.8	34.33	41.53	58.47	56-88
4.75	150.2	31.10	72.63	27.37	16-36
2.36	52.9	10.95	83.58	16.42	4-19
0.3	35.4	7.33	90.91	9.09	2-10
0.075	8.9	1.84	92.75	7.25	0-8

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SIEVE SIZE mm	Test 2				JOBMIX Gradation
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
26.5	0	0	0	100	100
19	22.3	4.62	4.62	95.38	90-100
13.2	140.7	29.16	33.78	66.22	56-88
4.75	175.5	36.37	70.16	29.84	16-36
2.36	72.3	14.98	85.14	14.86	4-19
0.3	32.6	6.76	91.90	8.10	2-10
0.075	12.8	2.65	94.55	5.45	0-8

Table-06: Bitumen Content Test Results for Location-03
BC-40MM (GRADE-II)

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473	472
3. Weight of Asphalt and Mineral matter Extracted, g	27	28
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27	28
7. Bitumen content in %	5.40	5.60
8. Average	5.50	

SIEVE SIZE mm	Test 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
19	0	0	0	100	100
13.2	20.2	20.2	4.3	95.7	90 - 100
9.5	62.3	82.5	17.4	82.6	70 - 88
4.75	95.7	178.2	37.7	62.3	53 - 71
2.36	42.1	220.3	46.6	53.4	42 - 58
1.18	43.7	264	55.8	44.2	34 - 48
0.600	46.8	310.8	65.7	34.3	26 - 38
0.300	40.5	351.3	74.3	25.7	18 - 28
0.150	33.5	384.8	81.4	18.6	12 - 20
0.075	52.3	437.1	92.4	7.6	4 - 10

SIEVE SIZE mm	Test 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Retained	Cumulative % Retained	Cumulative % Passing	
19	0	0	0	100	100
13.2	15.4	15.4	3.3	96.7	90 - 100
9.5	69.8	85.2	18.1	81.9	70 - 88
4.75	93.6	178.8	37.9	62.1	53 - 71
2.36	45.7	224.5	47.6	52.4	42 - 58
1.18	40.8	265.3	56.2	43.8	34 - 48
0.600	50.6	315.9	66.9	33.1	26 - 38
0.300	55.9	371.8	78.8	21.2	18 - 28
0.150	33.5	405.3	85.9	14.1	12 - 20
0.075	36.5	441.8	93.6	6.4	4 - 10

13/3/23
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Conclusion:

The file containing 2nd & part bill has been submitted for the above work to QA department on 09.03.2023 requesting for spot inspection. Engineers of QA/QC division have visited the work spot on 10.03.2023.

During the inspection, engineer in charge of work informed that items found in the bill, have been executed by the contractor & documents were made available by PMC team for inspection.

PMC team was instructed to assess the Gradation & Bitumen content on BM-50mm, Grade-II and BC-40mm, Grade-II. The Rebound hammer test and Bitumen Content and Gradation Tests were conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC consultants, it is concluded that the results of the samples collected are in accordance with the standards/ specifications mention in the BIS/IRC codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Further, QA/QC directs the PMC and Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

All materials or work not conforming to the requirements of the specifications shall be considered unacceptable and rejected. The unacceptable materials or works that are rejected shall be immediately removed unless the defects are corrected and approved by the engineer in-charge of work.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note:-

This report by QA/QC is pertaining to the work carried out in 2nd & part bill only. Therefore, further QA/QC reports shall be obtained for the items of work carried out in future Running Account bill / Final bill.

Safety precautions shall be taken at work spot to prevent any mishap, injuries or loss of life to general public and construction workers according to guidelines laid down in code of practices.

Engineer in charge of work shall obtain requisite approval and Implement traffic management plan prior to commencement of work.

Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at workspot.

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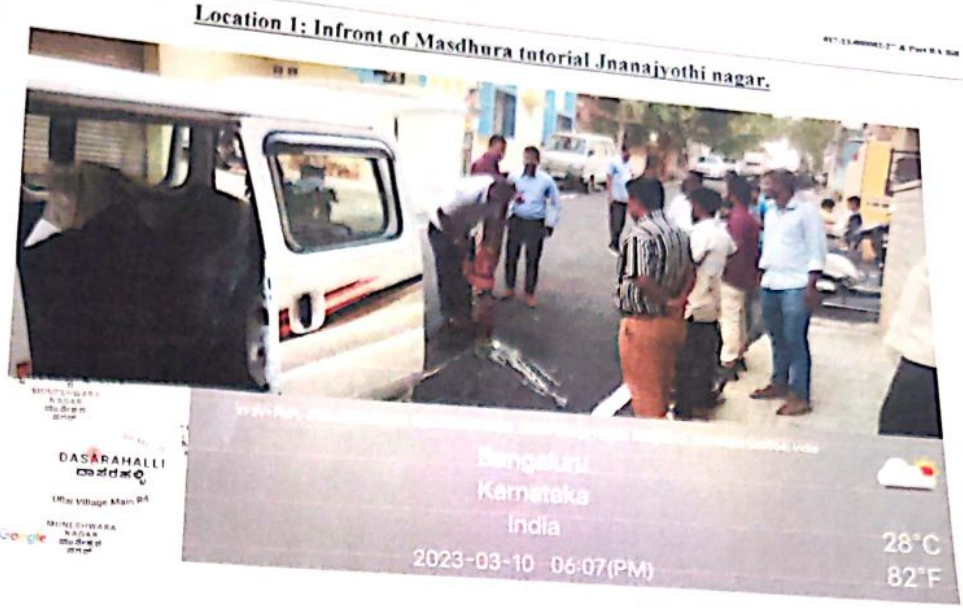
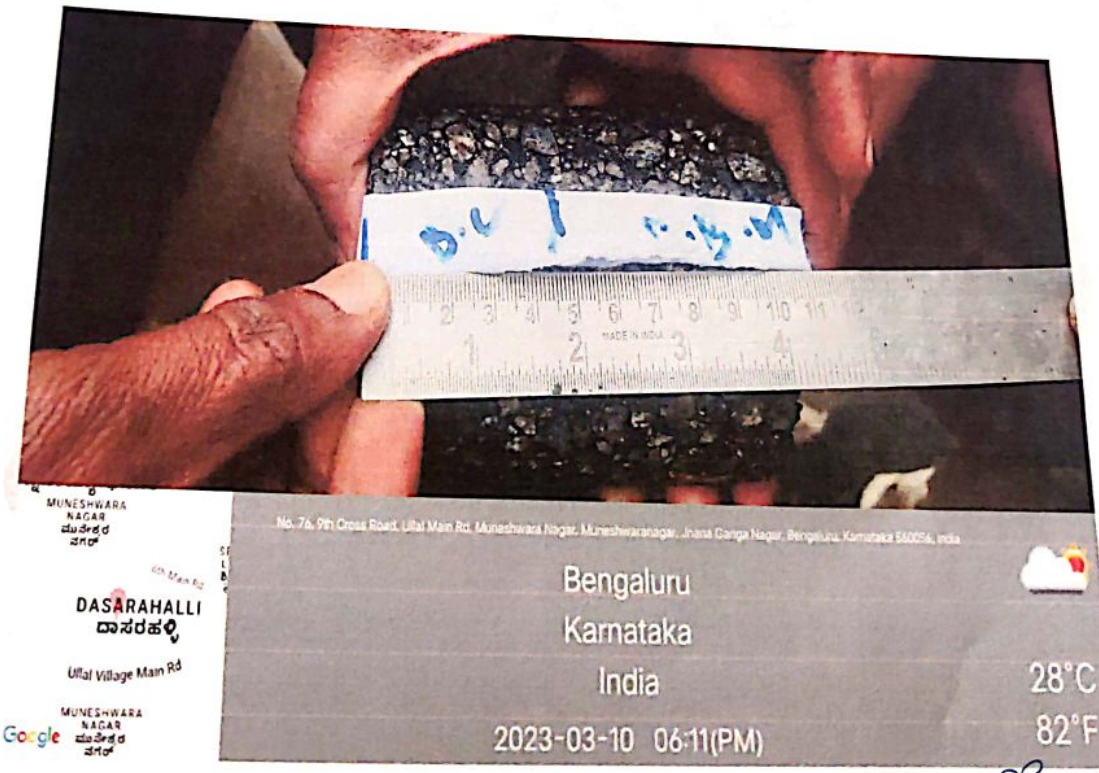
Location 1: Infront of Masdhura tutorial Jnanajyothi nagar.





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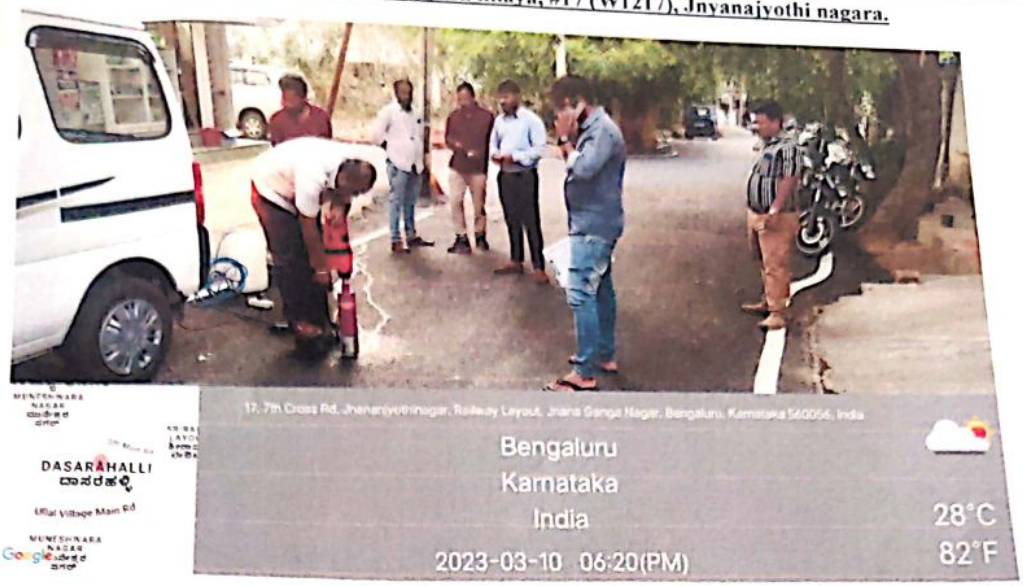
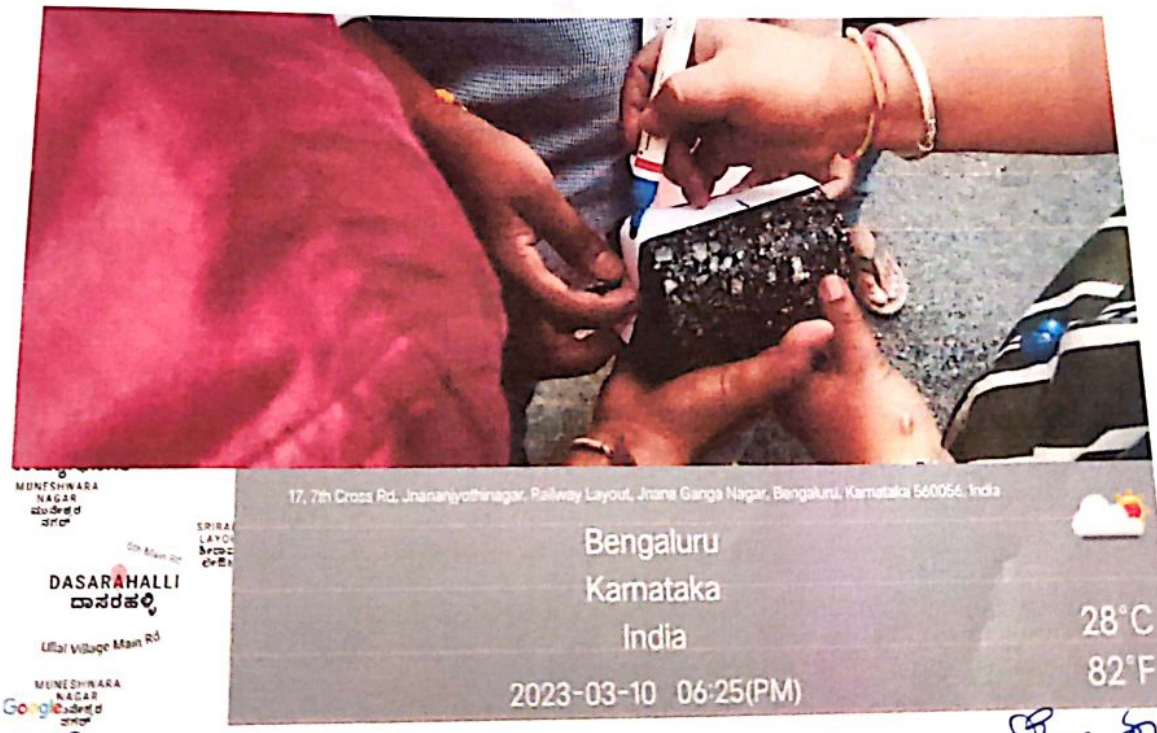
Location 2: Infront of akka tangiyara nilaya, #17 (W1217), Jnyanajyothi nagara.





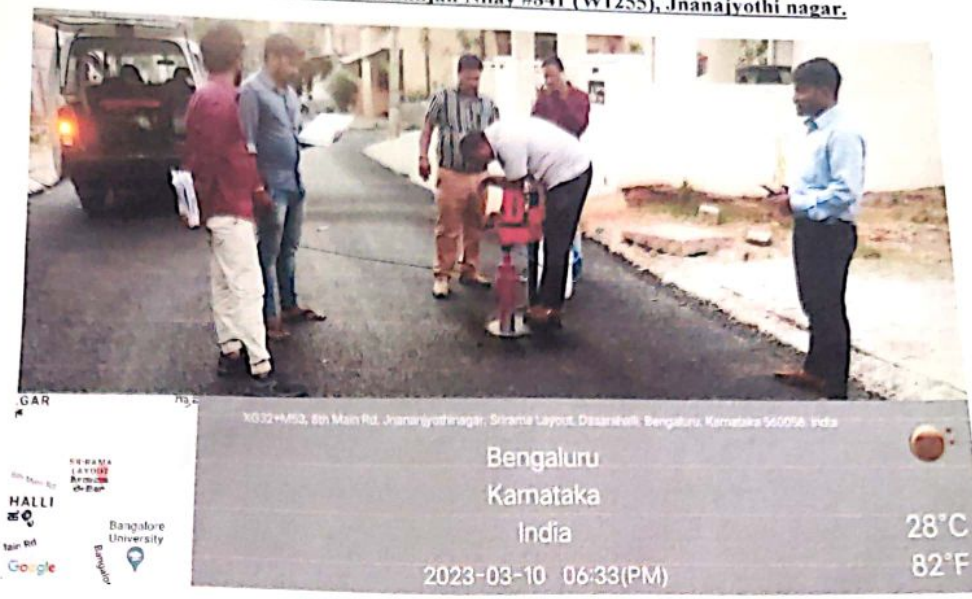
13/3/23
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಧರವನೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

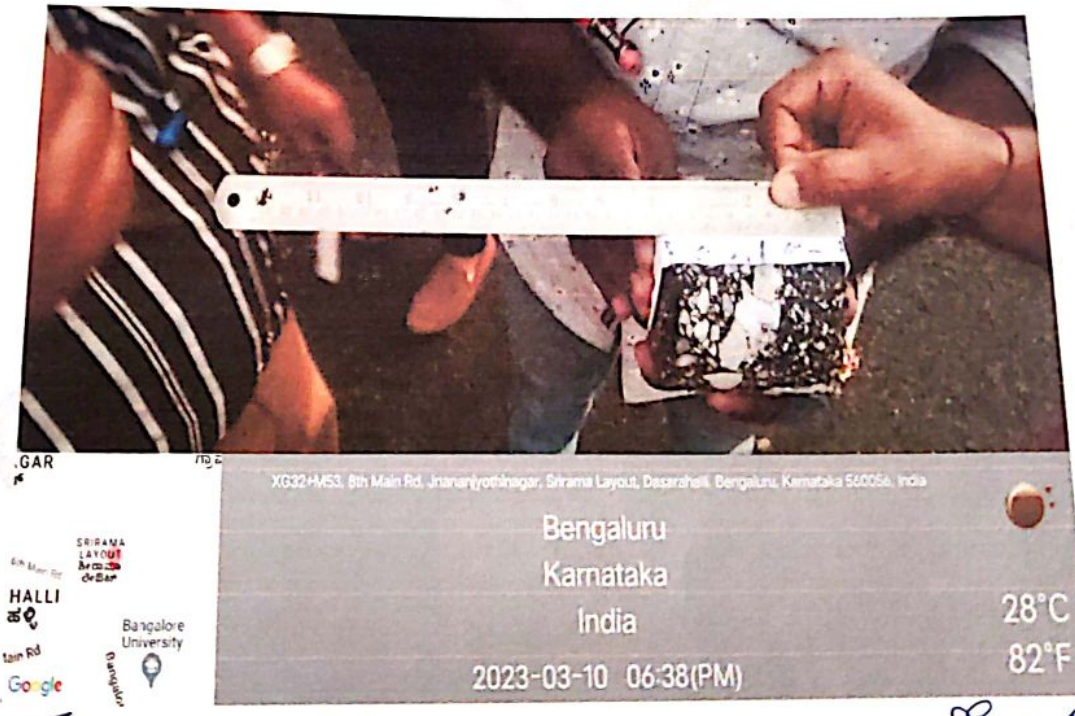
13/3/23
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಧರವನೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

13/03/2023
ಮುಖ್ಯ ಅಭಿಯಂತರರು
ಗುಣಧರವನೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Scanned with CamScanner

Location 3: Infront of Prabhanjan Nilay #841 (W1255), Jnanajyothi nagar.





13/3/23
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

13/3/23
ಮುಖ್ಯ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾ

Scanned with CamScanner